**What is claimed is:**

1. A correction system of an analog front end, the analog front end being used to receive a pixel signal outputted by a image sensor and convert the pixel signal to a digital output signal after amplifying the pixel signal, the image sensor comprising a plurality of black pixel units and a plurality of RGB pixel units, and outputting a plurality of black pixel signals and a plurality of RGB pixel signals, the correction system being used to correct the digital output signal, and comprising:

a correction module for

receiving the digital output signal; and

generating a first digital correction signal and at least one second digital correction signal when the image sensor outputs black pixel signals;

a first digital-to-analog converter for

receiving the first digital correction signal and converting the first digital correction signal to a first analog correction signal; and

inputting the first analog correction signal to the analog front end to correct the pixel signal inputted into the analog front end; and

a second digital-to-analog converter for

receiving the at least one second digital correction signal and converting the at least one second digital correction signal to at least one second analog correction signal; and

inputting the at least one second analog correction signal to the analog front end to be amplified and converted, then getting at least one first digital signal;

wherein the correction module generates a real converting curve according to the at least one first digital signal and gets a gain error by comparing the real converting curve with a ideal converting curve which presents the correct converting relation between the analog output signal and the digital output signal; and

wherein the correction module corrects the following pixel signals inputted into the analog front end according to the first analog correction signal, and corrects the following digital output signals generated by the analog front end by the gain error.

2. The correction system of claim 1, wherein the analog front end comprises a correlated double sampling module (CDS), a variable gain amplifier (VGA), and an analog-to-digital converter, the CDS being used to generate an analog sampling signal by receiving the pixel signal and double sampling the pixel signal; the VGA with plurality of gain factor being used to amplify the analog sampling signal with different gain factor according to different image captured by the image sensor; the analog-to-digital converter being used to convert the amplified analog sampling signal to the digital output signal.

3. The correction system of claim 2, wherein the first analog correction signal is inputted into the CDS in order to correct the analog sampling signal.

4. The correction system of claim 2, wherein the at least one second analog correction signal is inputted into the VGA in order to get the at least one first digital signal after amplified by the VGA and converted by the analog-to-digital converter.

5. The correction system of claim 2, wherein the at least one second analog correction signal is inputted into the analog-to-digital converter in order to get the at least one first digital signal after converted by the analog-to-digital converter.

6. The correction system of claim 1, further comprising a predetermined value, wherein the level of the corrected pixel signal is below the predetermined value.

7. The correction system of claim 1, wherein the correction module generates a plurality of converting curve segments according to the at least one first digital signal, and the real converting curve is composed of the plurality of converting curve segments.

8. A correction method of an analog front end, the analog front end being used to

receive a pixel signal outputted by a image sensor and convert the pixel signal to a digital output signal after amplifying the pixel signal, the image sensor comprising a plurality of black pixel units and a plurality of RGB pixel units, and outputting a plurality of black pixel signals and a plurality of RGB pixel signals, the correction method being used to correct the digital output signal, and comprising the following steps:

receiving the digital output signal;

generating a first digital correction signal and at least one second digital correction signal when the image sensor outputs black pixel signals;

converting the first digital correction signal to a first analog correction signal;

inputting the first analog correction signal to the analog front end to correct the pixel signal inputted into the analog front end;

converting the at least one second digital correction signal to at least one second analog correction signal;

inputting the at least one second analog correction signal to the analog front end to be amplified and converted, then getting at least one first digital signal;

generating a real converting curve according to the at least one first digital signal and getting a gain error by comparing the real converting curve with a ideal converting curve which presents the correct converting relation between the analog output signal and the digital output signal;

correcting the following pixel signals inputted into the analog front end according to the first analog correction signal; and

correcting the following digital output signals generated by the analog front end by the gain error.

9. The correction method of claim 8, wherein the analog front end comprises a correlated double sampling module (CDS), a variable gain amplifier (VGA), and an analog-to-digital converter, the CDS being used to generate an analog sampling signal by receiving the pixel signal and double sampling the pixel signal;

the VGA with plurality of gain factors being used to amplify the analog sampling signal with different gain factor according to different image captured by the image sensor; the analog-to-digital converter being used to convert the amplified analog sampling signal to the digital output signal.

10. The correction method of claim 9, wherein the first analog correction signal is inputted into the CDS in order to correct the analog sampling signal.

11. The correction method of claim 9, wherein the at least one second analog correction signal is inputted into the VGA in order to get the at least one first digital signal after amplified by the VGA and converted by the analog-to-digital converter.

12. The correction method of claim 9, wherein the at least one second analog correction signal is inputted into the analog-to-digital converter in order to get the at least one first digital signal after converted by the analog-to-digital converter.

13. The correction method of claim 8, further comprising the following step:

    setting a predetermined value to make the level of the corrected pixel signal below the predetermined value.

14. The correction method of claim 8, further comprising the following step:

    generating a plurality of converting curve segments according to the at least one first digital signal, wherein the real converting curve is composed of the plurality of converting curve segments.

15. A correction system for correcting a plurality of digital output signals generated by an analog front end, the analog front end being used to receive a plurality of analog output signals outputted by a signal source and convert the plurality of analog output signals to the plurality of digital output signals after amplifying the plurality of analog output signals, the plurality of analog output signals comprising a plurality of basis signals and a plurality of content signals, the basis signal comprising a signal level, the correction system comprising:

    a correction module for

receiving the plurality of digital output signals; and

generating a first digital correction signal and at least one second digital correction signal when the signal source outputs basis signals;

a first digital-to-analog-converter for

receiving the first digital correction signal and converting the first digital correction signal to a first analog correction signal; and

inputting the first analog correction signal into the analog front end to correct the plurality of analog output signals generated by the signal source; and

a second digital-to-analog converter for

receiving the at least one second digital correction signal and converting the at least one second digital correction signal to at least one analog correction signal; and

inputting the at least one second analog correction signal to the analog front end to be amplified and converted, then getting at least one digital signal; wherein the correction module generates a real converting curve according to the at least one first digital signal and gets a gain error by comparing the real converting curve with a ideal converting curve which presents the correct converting relation between the analog output signal and the digital output signal; and

wherein the correction module corrects the following analog output signals inputted into the analog front end according to the first digital correction signal, and corrects the following digital output signals generated by the analog front end according to the gain error.

16. The correction system of claim 15, wherein the analog front end comprises a correlated double sampling module (CDS), a variable gain amplifier (VGA), and an analog-to-digital converter, the CDS being used to generate a analog sampling signal by receiving and double sampling the analog output signal; the VGA with plurality of gain factors being used to amplify the analog sampling signal with different gain factor; the analog-to-digital converter being used to convert the

amplified analog sampling signal to the digital output signal.

17. The correction system of claim 16, wherein the first analog correction signal is inputted into the CDS in order to correct the analog sampling signal.

18. The correction system of claim 16, wherein the at least one second analog correction signal is inputted into the VGA in order to get the at least one first digital signal after amplified by the VGA and converted by the analog-to-digital converter.

19. The correction system of claim 16, wherein the at least one second analog correction signal is inputted into the analog-to-digital converter in order to get at least one first digital signal after converted by the analog-to-digital converter.

20. The correction system of claim 15, further comprising a predetermined value, wherein the level of the corrected basis signal is below the predetermined value.